In the claims:

1. (Original) A load balancing system for dynamic balancing of load between sectors of local sectored cellular base stations, the system comprising:

a plurality of repeaters for providing local coverage within the sectors, and

a switch, for associating between the repeaters and a respective one of said local sectored base stations, and for switching the repeaters between different sectors.

2. (Original) The system of claim 1, wherein said switch comprises a switching matrix for permitting connections between ones of said plurality of repeaters and each sector of a respective base station

3. (Original) The system of claim 2, wherein said switching matrix comprises a control mechanism for controlling said switching matrix to switch ones of said repeaters from a currently heavily loaded sector to a currently lightly loaded sector.

4. (Original) The system of claim 2, wherein said switching matrix has a base station side and a repeater side and wherein said base station side is connected to RF outputs of a respective sectored base station.

5. (Original) The system of claim 4, wherein said repeater side has a plurality of connections, each for a different repeater and wherein each output is associated with a frequency converter.

6. (Original) The system of claim 5, wherein said frequency converters are configured for converting between an assigned base station RF frequency (F1) and another frequency (F2) within the same cellular band as an assigned base station RF frequency, thereby allowing legacy antennas of said base station to be used for communicating with said repeaters.

7. (Original) The system of claim 6 wherein assigned base station RF frequency and said another frequency are both multi-carrier frequencies.

8. (Original) The system of claim 6, wherein respective repeaters are tuned to different frequencies.

9. (Original) The system of claim 6, wherein the another frequency is in a different frequency band from a base station assigned frequency and wherein additional antennas are applied to said base station for communicating with said repeaters.

10. (Currently Amended) The system of claim 1~~, or claim 2~~, further comprising an omni-antenna applied to a respective base station for communicating with said repeaters.

11. (Original) The system of claim 2, wherein said switching matrix is remotely located from a respective cellular base station and is connected thereto via a communication link.

12. (Original) The system of claim 11, wherein said communication link is a radio link.

13. (Original) The system of claim 11, wherein said communication link is a directional communication link.

14. (Original) The system of claim 11, wherein said communication link is an optical link.

15. (Original) The system of claim 11, wherein said communication link is a microwave link.

16. (Original) The system of claim 2, wherein said repeater is connected to said switching matrix by radio link.

17. (Original) The system of claim 2, wherein said repeater is connected to said switching matrix by a directional link.

18. (Original) The system of claim 2, wherein said repeater is connected to said switching matrix by optical link.

19. (Original) The system of claim 2, wherein said repeater is connected to said switching matrix via a microwave link.

20. (Original) The system of claim 2, wherein at least one of said repeaters has connections to a plurality of switching matrices, thereby allowing it to be associated with sectors from different base stations.

21. (Original) The system of claim 1, wherein at least one of said repeaters is assignable between sectors of at least two different base stations.

22. (Original) The system of claim 3, wherein said control mechanism is responsive to a per-sector load sensing mechanism.

23. (Original) The system of claim 22, wherein said control mechanism comprises an optimization algorithm that takes an output of said per-sector load sensing mechanism and efficiently reassigns said repeaters between said sectors to balance said load.

24. (Original) The system of claim 22, wherein said per-sector load sensing mechanism is sensitive to total transmitted power per sector.

25. (Original) The system of claim 22, wherein said per-sector load sensing mechanism is sensitive to a current number of users per sector.

26. (Original) The system of claim 22, wherein said per sector load sensing mechanism is sensitive to uplink received power.

27. (Original) The system of claim 22, wherein said per-sector load sensing mechanism is sensitive to total transmitted power per sector and a current number
of users per sector.

28. (Original) The system of claim 22, further comprising a per repeater load sensing mechanism associated with said per sector load sensing mechanism.

29. (Original) The system of claim 22, further comprising a load differentiator for differentiating between a direct load of the sector and a contribution to the load from said repeaters.

30. (Original) The system of claim 29, wherein said differentiator is configured to mark the repeater signal and to monitor the mark.

31. (Original) The system of claim 29, wherein said differentiator is configured to measure an uplink repeater signal at said switching matrix.

32. (Original) The system of claim 1, wherein at least one of said base stations comprises an additional sector dedicated for repeater traffic.

33. (Original) A load balancing system for dynamic balancing of load between sectors of local sectored cellular base stations, the system comprising:

a plurality of repeaters for providing localized coverage within the sectors,

an additional sector at a respective base station for handling repeater traffic, and

a switch, for associating between the repeaters and said additional sector.

34. (Original) A method of load balancing at a sector-based cellular base station whose traffic has temporary hot spot characteristics, the method comprising:

assigning a repeater to at least one of said hotspots,

associating said repeater with a switching matrix,

connecting said switching matrix to allow switching of said at least one repeater between sectors of said sector-based cellular base station,

measuring usage load at respective ones of said sectors, and

controlling said switching matrix to switch said at least one repeater between said sectors in order to achieve balancing of said usage load between said sectors.

35. (Original) A method of upgrading an existing sector-based cellular base station using repeaters, said upgrade to enable dynamic load balancing, the upgrade comprising:

attaching a switching matrix to respective sector RF connections of said base station,

assigning respective connections of said switching matrix to said repeaters,

obtaining an output from said base station indicating sector usage loading, and

connecting said obtained output to control said switching matrix to switch said repeaters between said sector RF connections, thereby to enable balancing of repeater-based load between said sectors.

36. (Original) A method of load balancing between sectors of a cellular base station, the sectors having repeaters, the method comprising:

measuring load at respective sectors of the cellular base station,

determining whether there are sectors that are overloaded and underloaded, and

for each overloaded sector, switching at least one repeater therefrom to another sector.

37. (Original) The method of claim 36, wherein said at least one repeater is a repeater from another sector currently connected via a respective overloaded sector.

38. (Original) The method of claim 36, wherein said at least one repeater is a repeater from said currently overloaded sector.

39. (Original) The method of claim 36, wherein said switching comprises switching a single repeater and said measuring, determining and switching are repeated iteratively until no sector is overloaded.

40. (Original) The method of claim 36, wherein said switching comprises switching a single repeater and said measuring, determining and switching are repeated iteratively until it is apparent that a state in which no sector is overloaded is currently unattainable.